

# Guillaume SARTORETTI

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<https://scholar.google.com/citations?user=n7NzZ0sAAAAJ>

## Education

June 2018 – June 2019	<b>Manufacturing Futures Initiative (MFI) Postdoctoral Fellow, Robotics Institute, CMU</b> <u>Project Title:</u> <i>Distributed Learning for large-scale multi-robot path planning in complex environments.</i> <u>Advisor:</u> Prof. Howie Choset.
June 2016 – June 2018	<b>Postdoctoral Fellow, Robotics Institute, Carnegie Mellon University</b> <u>Advisor:</u> Prof. Howie Choset.
April 2016	<b>PhD in <i>Robotics, Control and Intelligent Systems</i>, EPFL, Switzerland</b> <u>Title:</u> <i>Control of Agent Swarms in Random Environments</i> <u>Advisor:</u> Prof. Max-Olivier Hongler.
March 2012	<b>Master of Science in Mathematics and Computer Science, University of Geneva.</b>
June 2010	<b>Bachelor of Science in Mathematics and Computer Science, University of Geneva.</b>

## Professional and Teaching Experience

2019 - Current	<b>Lecturer Activities, Mechanical Engineering Department, NUS.</b> <ul style="list-style-type: none"><li>▪ 2020 – Now: “Microprocessor applications”, ME3241, (Bachelor, 3<sup>rd</sup> year).</li><li>▪ 2022 – Now: “Deep learning for robotics”, ME5406, (Master’s level course).</li><li>▪ 2021 – 2023: “Machine Vision”, ME5405 (Master’s level course).</li><li>▪ 2023 – Now: “Machine learning in robotics”, ME5418, (Master’s level course).</li></ul>
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## Student Supervision

	<b><u>Postgraduate students supervised to date</u></b>
2020 – 2025	<i>Pamela WANG, SUTD-NUS joint Ph.D, Guided Cooperation for Multi-Agent Teams</i>
2020 – 2024	<i>DAI Weiheng, Ph.D, Distribution and Cooperation in Multi-Agent Systems via Reinforcement Learning</i>
2020 – 2024	<i>SUN Ge, Ph.D, Legged Robot Locomotion: Bio-Inspired Approaches to Environmental Adaptation and Interaction</i>
2022 – 2024	<i>Maxime DE MONTLEBERT, Active SLAM for Decentralized and Disconnected MAS</i>
2021 – 2024	<i>CAO Yuhong, Ph.D, Context-Aware Learning for Autonomous Robotic Deployments in Unknown Environments</i>
2021 – 2023	<i>YANG Tianze, M.Eng, Deep Reinforcement Learning in Multi-Agent Path Finding</i>

## Research Grants and Funded Projects

2024 - 2025	Funded Research Project, T-Lab@NUS and DSO ( <u>main PI</u> ). <span style="float: right;"><u>Amount:</u> S\$ 105k.</span> <u>Title:</u> <i>Generative and Foundation Models for Cooperative Multi-Agent Learning.</i>
2023 - 2028	ST Engineering Research Funds under IPP-PhD Program ( <u>main PI</u> ; Co-Pi: M. Ang). <u>Title:</u> <i>Deep Learning for Decentralised Multi-Agent Collaboration.</i> <span style="float: right;"><u>Amount:</u> S\$ 150k.</span>
2023 - 2026	MOE Academic Research Fund (AcRF) Tier 1 FRC Research Grant ( <u>main PI</u> ). <u>Title:</u> <i>Scalable Whole-Body Control for Legged Mobile Manipulation.</i> <span style="float: right;"><u>Amount:</u> S\$ 250k.</span>
2023 - 2025	Amazon Research Award ( <u>main PI</u> ). <u>Title:</u> <i>Distributed Learning for Human-Aware Multi-Agent Pathfinding.</i> <span style="float: right;"><u>Amount:</u> US\$ 80k.</span>
2022 - 2025	Funded Research Project, T-Lab@NUS and DSO ( <u>main PI</u> ). <u>Title:</u> <i>Decentralized Search of Evasive Agents.</i> <span style="float: right;"><u>Amount:</u> S\$ 260k.</span>
2022 - 2025	Maritime Transformation Programme White Space Funding ( <u>main PI since 01/2024</u> ) <u>Title:</u> <i>Robotic Systems for Securing/Un-securing of Containers in Vessels.</i> <u>Co-PIs:</u> Profs. G. Chirikjian (original PI), M. ANG, Dr. H. ZHANG. <span style="float: right;"><u>Amount:</u> S\$ 4.8M.</span>
2021 - 2026	Project 3, Work Package 4 of “Cisco-NUS Corporate Laboratory” ( <u>Co-PI</u> ). <u>Title:</u> <i>Scalable, Decentralized Urban Traffic Management for Autonomous Vehicles.</i> <u>Co-PIs:</u> Profs. Biplab Sidkar (PI), Marcelo ANG. <span style="float: right;"><u>Amount:</u> S\$ 650k.</span>
2021 - 2022	Seed Research Project, T-Lab@NUS ( <u>main PI</u> ). <u>Title:</u> <i>Learning Based Approaches for Advanced Multi-Agent Search Problems.</i> <u>Co-PIs:</u> Dr. Jiawei CAO. <span style="float: right;"><u>Amount:</u> S\$ 60k.</span>
2021 - 2024	MOE Academic Research Fund (AcRF) Tier 1 FRC Research Grant ( <u>main PI</u> ). <u>Title:</u> <i>Comms-Based AI Methods for Multi-Robot Dec. Cooperation.</i> <span style="float: right;"><u>Amount:</u> S\$ 226,5k.</span>
2020 - 2022	Work Package 3 of “Urban Traffic Flow Smoothing Models” ( <u>Co-PI</u> ). <u>Title:</u> <i>Traffic Light Control for Optimal Traffic Flow.</i> <u>Co-PIs:</u> Profs. Kien Ming Ng (PI), Marcelo ANG, and Gerard LENG. <span style="float: right;"><u>Amount:</u> S\$ 780k.</span>
2020 - 2021	Seed Research Project, T-Lab@NUS ( <u>main PI</u> ). <u>Title:</u> <i>Scalable Decentralized Multi-Robot Search via Distributed RL.</i> <u>Co-PIs:</u> Drs. Swee Huat Rodney TEO and Jiawei CAO. <span style="float: right;"><u>Amount:</u> S\$ 60k.</span>
2018 - 2019	Manufacturing Futures Initiative (MFI) Postdoctoral Fellowship. <u>Title:</u> <i>Distributed Learning for large-scale multi-robot path planning in complex environments.</i> <span style="float: right;"><u>Advisor:</u> Prof. Howie Choset.</span>
2018 - 2019	Extreme Science and Engineering Discovery Environment (XSEDE) Startup grant in the form of 2’500 additional hours of GPU computation at the PSC.

## Prizes and Awards

2023	NUS’ College of Design and Engineering (CDE) <b>Outstanding Early Career Award</b> 2023.
2022	Amazon Research Award (ARA). See details in grants and funded projects above.

2022	<b>Best Student Paper Award</b> at the International Symposium on Distributed Autonomous Robotic Systems (DARS 2022). See details in publication list below.
2022	<b>Best Paper Award</b> at the IEEE International Conference on Unmanned Systems (ICUS 2022). See details in publication list below.
2021	<b>Best Paper Award</b> at the International Symposium on Distributed Autonomous Robotic Systems (DARS 2022). See details in publication list below.
2020	<b>First place</b> at the first round of the NeurIPS 2020 “Flatland” Competition ( <a href="https://www.aicrowd.com/challenges/flatland">https://www.aicrowd.com/challenges/flatland</a> ), and <b>fourth place</b> overall.

## Invited Lectures, Seminars and Colloquia

27/11/2024	Qingbiao LI's Research Group, University of Macau, Invited Seminar.
14/10/2024	IROS 2024 Workshop on Multi-Robot Path Planning, Keynote Speaker.
25/06/2024	Keynote Speaker at ST Engineering's AI Seminar Series.
07/05/2024	AAMAS 2024 Workshop on Optimization and Learning in MAS, Keynote Speaker.
22/02/2024	Caltech Special Seminar; Host: Prof. Soon-Jo Chung.
20/02/2024	Multi-Robot Systems Lab, Stanford University, Palo Alto, USA, Invited Seminar.
19/02/2024	Daltorio Lab, CASE Western Reserve University, Cleveland, USA, Invited Seminar.
16/02/2024	GRASP Seminar, University of Pennsylvania, USA; Host: Prof. M. Ani Hsieh. <a href="https://www.youtube.com/watch?v=61RKzhRy0yE">https://www.youtube.com/watch?v=61RKzhRy0yE</a>
09/02/2024	ARCS Lab, Carnegie Mellon University, Pittsburgh, USA, Invited Seminar.
02/02/2024	Computational Robotics Lab, ETHZ, Zürich, CH, Invited Seminar.
01/02/2024	Biorobotics Lab, EPFL, Lausanne, CH, Invited Seminar.
27/09/2023	Algorithmic Alignment Group, MIT, Cambridge, USA, Invited Seminar.
25/09/2023	Speaker at the SUTD Workshop on Robotic Perception.
20/09/2023	Speaker at the ArmaSuisse Workshop on Swarm Intelligence.
08/06/2023	Prorok Laboratory, Cambridge University, Cambridge, UK, Invited Seminar.
29/05/2023	ICRA 2023 Workshop on Multi-Robot Learning, Panelist.
14/02/2023	AAAI 2023 Workshop on Multi-Agent Pathfinding (MAPF), Keynote Speaker.
17/10/2022	Machine Learning and Its Applications Intl. Workshop, NUS-IMS. Invited Seminar.
20/05/2022	Amazon Robotics, Boston, USA, Invited Seminar.
27/09/2021	ETHZ Autonomy Talk, 1h Invited Seminar (virtual), <a href="https://youtu.be/2Jts4uFbbBM">https://youtu.be/2Jts4uFbbBM</a>
02/12/2019	National University of Singapore, Invited Seminar, Temasek Laboratory.
06/11/2019	Case Western Reserve University, Invited Seminar, Mechanical & Aerospace Eng. Dpt.

09/19/2018	Invited Seminar at the National Robotics Engineering Center (NREC).
08/09/2018	Tufts University, Invited Seminar, Computer Science Department.
01/28/2016	EPFL, Informal private presentation, DISAL laboratory.
09/29/2015	Drexel University, Private presentation, SAS and GRASP laboratories.

## Other Academic Activities

13/05/2024	Workshop Organizer at ICRA 2024: Full Day “Tutorial on Ergodic Planning.”
2023 - Current	Associate Editor for the IEEE International Conference on Robotic and Automation (ICRA), in the “Robot Learning” area.
2023 - Current	Associate Editor for SAGE’s International Journal of Robotics Research.
2022 - Current	Section Editor for Springer Nature’s Encyclopedia of Robotics, for the “Multiple Mobile Robot Systems” Section.
2021 - 2023	Associate Editor for the IEEE International Conference on Robotic and Automation (ICRA), in the “Mechanism, Design, and Control” area.
2021 - Current	Program Committee Member (PC) for the International Joint Conference on Artificial Intelligence (IJCAI), the AAAI Conference on Artificial Intelligence, and the European Conference on Artificial Intelligence (ECAI).
2021 - Current	Associate Editor for the Intl. Symp. on Multi-Robot and Multi-Agent Systems (MRS).
2020 - Current	Associate Editor for IEEE RA-L (in the <i>Multiple and Distributed Systems</i> area).
2019 - 2023	Guest Editor for Springer Nature Applied Sciences’ topical collection on “Distributed Mobile Robotic Systems.”
2019 - Current	Reviewer for <i>Science Robotics</i> (ScienceMag), JAAMAS (Springer), <i>SICOMP</i> (Sage), <i>Robotics and Automation Letters</i> (RA-L, IEEE), as well as various international conferences on robotics and AI (RSS, ICRA, IROS, WAFR, AAMAS, ECC, ACC, CASE).

## Publications: Thesis

2016	<u>PhD Thesis</u> : G. Sartoretti and M.-O. Hongler. <i>Control of Agent Swarms in Random Environments</i> . EPFL, Lausanne (CH).
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## Publications: Refereed Journal Papers

2025	Y. Zhang, H. Goel, P. Li, M. Damani, S. Chinchali, and G. Sartoretti. CoordLight: Learning Decentralized Coordination for Network-Wide Traffic Signal Control. <i>Accepted in IEEE Transactions on Intelligent Transportation Systems (T-ITS)</i> .
2025	M. Fan, H. Liu, G. Wu, A. Gunawan, and G. Sartoretti. Multi-UAV reconnaissance mission planning via deep reinforcement learning with simulated annealing. <i>Swarm and Evolutionary Computation</i> , 93 (2025): 101858.

2025 W. Dai, U. Rai, J. Chiun, Y. Cao, and **G. Sartoretti**. Heterogeneous Multi-robot Task Allocation and Scheduling via Reinforcement Learning. *IEEE Robotics and Automation Letters (RA-L)*, 10(3):2654-2661.

2024 J. Liang, Y. Cao, Y. Ma, H. Zhao, and **G. Sartoretti**. HDPlanner: Advancing Autonomous Deployments in Unknown Environments Through Hierarchical Decision Networks. *IEEE RA-L*, 10(1):256-263.

2024 Y. Cao, R. Zhao, Y. Wang, B. Xiang, and **G. Sartoretti**. Deep Reinforcement Learning-based Large-scale Robot Exploration. *IEEE RA-L*, 9(5):4631-4638.

2024 M. Fan, Y. Wu, Z. Cao, W. Song, **G. Sartoretti**, H. Liu, and G. Wu. Conditional Neural Heuristic for Multiobjective Vehicle Routing Problems. *IEEE Transactions on Neural Networks and Learning Systems*.

2023 Y. Wang, Y. Wang, and **G. Sartoretti**. Full Communication Memory Networks for Team-Level Cooperation Learning. *Autonomous Agents and Multi-Agent Systems (JAAMAS)*.

2023 Y. Gong, G. Sun, A. Nair, A. Bidwai, R. CS, J. Grezmak, **G. Sartoretti** and K. A. Daltorio. Legged robots for object manipulation: A review. *Frontiers in Mechanical Engineering*.

2022 M. Fan, Y. Wu, G. Wu, Z. Cao, H. Guo, and **G. Sartoretti**. Deep Reinforcement Learning for UAV Routing in The Presence of Multiple Charging Stations. *IEEE Transactions on Vehicular Technology*, 72(5):5732-5746.

2022 Y. Wang, M. Damani, P. Wang, Y. Cao, and **G. Sartoretti**. Distributed Reinforcement Learning for Robot Teams: A Review. *Springer's Current Robotics Reports*, 3(4):239-257.

2022 G. Sun and **G. Sartoretti**. Joint-Space CPG for Safe Foothold Planning and Body Pose Control during Locomotion and Climbing. *IEEE RA-L*, 7(4):9889-9896.

2022 B. Chong, Y. Ozkan-Aydin, J. Rieser, **G. Sartoretti**, et al. A general locomotion control framework for multi-legged locomotors. *Bioinspiration & Biomimetics*, 17(4):046015.

2022 S. Shaw, E. Wenzel, A. Walker, and **G. Sartoretti**. ForMIC: Foraging via Multiagent RL with Implicit Communication. *Robotics and Automation Letters (RA-L)*, 7(2):4877-4884.

2021 M. Damani, Z. Luo, E. Wenzel, and **G. Sartoretti**. PRIMAL<sub>2</sub>: Pathfinding via Reinforcement and Multiagent Imitation Learning - Lifelong. *IEEE RA-L*, 6(2):2666-2673.

2021 B. Chong, Y.O. Aydin, C. Gong, **G. Sartoretti**, ..., D.I. Goldman & H. Choset. Coordination of lateral body bending and leg movements for sprawled posture quadrupedal locomotion. *The International Journal of Robotics Research*, 40(4-5):747-763.

2020 B. Freed, **G. Sartoretti**, and H. Choset. Simultaneous policy and discrete communication learning for multi-agent cooperation. *IEEE RA-L*, 5(2):2498-2505.

2019 **G. Sartoretti**, W. Paivine, Y. Shi, Y. Wu, H. Choset. Distributed learning of decentralized control policies for articulated mobile robots. *Transactions in Robotics*, 35(5):1109-1122.

2019 **G. Sartoretti**, J. Kerr, Y. Shi, G. Wagner, T. K. S. Kumar, S. Koenig, H. Choset. PRIMAL: Pathfinding via Reinforcement and Imitation Multi-Agent Learning. *IEEE RA-L*, 4(3):2378-2385.

2016 **G. Sartoretti**. Leader-based versus soft control of multi-agent swarms. *Artificial Life and Robotics*, 21(3):302-307.

2016	<b>G. Sartoretti</b> and M.-O. Hongler. Interacting Brownian swarms: Analytical results. <i>Entropy</i> , 18, 27.
2014	<b>G. Sartoretti</b> , M.-O. Hongler, M. Elias de Oliveira, and F. Mondada. Decentralized self-selection of swarm trajectories: From dynamical system theory to robotic implementation. <i>Swarm Intelligence</i> , vol. 8(no. 4):329-351.
2013	<b>G. Sartoretti</b> and M.-O. Hongler. Self-organized mixed canonical-dissipative dynamics for Brownian planar agents. <i>Cybernetics and Physics</i> , 2(1):41-46.
2013	B. Barbieri, <b>G. Sartoretti</b> , J.-L. Falcone, B. Chopard, and M. J. Gander. Traffic prediction based on a local exchange of information. <i>Journal of Cellular Automata</i> , 8(5-6):429-441.

## Publications: Refereed Conference Papers

2025	<i>Y. Cao*</i> , <i>J. Lew*</i> , <i>J. Liang</i> , <i>J. Cheng</i> , and <b>G. Sartoretti</b> . DARE: Diffusion Policy for Autonomous Robot Exploration. <b>Accepted for presentation</b> at ICRA 2025.
2025	<i>J. Chiun</i> , <i>S. Zhang</i> , <i>Y. Wang</i> , <i>Y. Cao</i> , and <b>G. Sartoretti</b> . MARVEL: Multi-Agent Reinforcement Learning for constrained field-of-View multi-robot Exploration in Large-scale environments. <b>Accepted for presentation</b> at ICRA 2025.
2025	<i>S. Liao</i> , <i>W. Xia</i> , <i>Y. Cao</i> , <i>W. Dai</i> , <i>C. He</i> , <i>W. Wu</i> , and <b>G. Sartoretti</b> . SIGMA: Sheaf-Informed Geometric Multi-Agent Pathfinding. <b>Accepted for presentation</b> at ICRA 2025.
2025	<i>H. Jiang*</i> , <i>Y. Wang*</i> , <i>R. Veerapaneni</i> , <i>T. Duhan</i> , <b>G. Sartoretti</b> , and <i>Jiayoang Li</i> . Deploying Ten Thousand Robots: Scalable Imitation Learning for Lifelong Multi-Agent Path Finding. <b>Accepted for presentation</b> at ICRA 2025.
2025	<i>Y. Wang</i> , <i>T. Duhan</i> , <i>J. Li</i> , and <b>G. Sartoretti</b> . LNS2+RL: Combining Multi-Agent Reinforcement Learning with Large Neighborhood Search in Multi-Agent Path Finding. <b>Accepted for oral presentation</b> at AAAI 2025 ( <b>4.6% acceptance rate</b> for oral talk).
2024	<i>Y. Wang</i> , <i>Y. Cao</i> , <i>J. Chiun</i> , <i>S. Koley</i> , <i>M. Pham</i> , and <b>G. Sartoretti</b> . ViPER: Visibility-based Pursuit-Evasion via Reinforcement Learning. <i>Conference on Robot Learning (CoRL 2024)</i> .
2024	<i>Y. Ma</i> , <i>J. Liang</i> , <i>Y. Cao</i> , <i>D. Tan</i> , and <b>G. Sartoretti</b> . Privileged Reinforcement and Communication Learning for Distributed, Bandwidth-limited Multi-Robot Exploration. <i>International Symposium on Distributed Autonomous Robotics Systems (DARS 2024)</i> .
2024	<i>G. Sun</i> , <i>M. Shafiee</i> , <i>P. Li</i> , <i>G. Bellegarda</i> , <i>A. Ijspeert</i> , and <b>G. Sartoretti</b> . Learning-based Hierarchical Control: Emulating the Central Nervous System for Bio-Inspired Legged Robot Locomotion. <i>IEEE Intl. Conference on Intelligent Robots and Systems (IROS 2024)</i> .
2024	<i>S. Sood</i> , <i>G. Sun</i> , <i>P. Li</i> , and <b>G. Sartoretti</b> . DecAP: Decaying Action Priors for Accelerated Learning of Torque-Based Legged Locomotion Policies. <i>IROS 2024</i>
2024	<i>D. Tan</i> , <i>Y. Ma</i> , <i>J. Liang</i> , <i>Y. C. Chng</i> , <i>Y. Cao</i> , and <b>G. Sartoretti</b> . IR2: Implicit Rendezvous for Robotic Exploration Teams under Sparse Intermittent Connectivity. <i>IROS 2024</i> .
2024	<i>Y. Zhang</i> , <i>P. Li</i> , <i>M. Fan</i> , and <b>G. Sartoretti</b> . HeteroLight: A General and Efficient Learning Approach for Heterogeneous Traffic Signal Control. <i>IROS 2024</i> .
2024	<i>J. Taylor</i> , <i>I. Nursultan</i> , <i>M. Y. Chuah</i> , <i>W.-Y. Yau</i> , <b>G. Sartoretti</b> , and <i>E. Camci</i> . Reconfigurable multi-rotor for high-precision physical interaction. <i>IROS 2024</i> .

2024 A. Rao, **G. Sartoretti**, and H. Choset. Learning Heterogeneous Multi-Agent Allocations for Ergodic Search. *IEEE Intl. Conference on Robotics and Automation (ICRA 2024)*.

2024 C. He, T. Yang, T. Duhan, Y. Wang, and **G. Sartoretti**. ALPHA: Attention-based Long-horizon Pathfinding in Highly-structured Areas. ICRA 2024.

2024 W. Dai, A. Bidwai, and **G. Sartoretti**. Dynamic Coalition Formation and Routing for Multirobot Task Allocation via Reinforcement Learning. *ICRA 2024*.

2024 Y. Wu\*, M. Fan\*, Z. Cao, R. Gao, Y. Hou, and **G. Sartoretti**. Collaborative Deep Reinforcement Learning for Solving Multi-Objective Vehicle Routing Problems. *International Conf. on Autonomous Agents and Multiagent Systems (AAMAS 2024)*.

2024 Y. Yang\*, M. Fan\*, C. He, J. Wang, H. Huang, and **G. Sartoretti**. Attention-based Priority Learning for Limited Time Multi-Agent Path Finding. *AAMAS 2024*.

2023 T. Yang, Y. Cao, and **G. Sartoretti**. Intent-based Deep Reinforcement Learning for Multi-agent Informative Path Planning. *International Symposium on Multi-Robot and Multi-Agent Systems (MRS 2023)*.

2023 J. Liang, Z. Wang, Y. Cao, J. Chiun, M. Zhang, and **G. Sartoretti**. Context-Aware Deep Reinforcement Learning for Autonomous Robotic Navigation in Unknown Area. *Conference on Robot Learning (CoRL 2023)*.

2023 Y. Wang, B. Xiang, S. Huang, and **G. Sartoretti**. SCRIMP: Scalable Communication for Reinforcement- and Imitation-Learning-Based Multi-Agent Pathfinding. *International Conference on Intelligent Robots and Systems (IROS 2023)*.

2023 Y. Wang, Y. Wang, Y. Cao, and **G. Sartoretti**. Spatio-Temporal Attention Network for Persistent Monitoring of Multiple Mobile Targets. *IROS 2023*.

2023 B. Freed, S. Venkatraman, **G. Sartoretti**, J. Schneider, and H Choset. Learning Temporally Abstract World Models without Online Experimentation. *International Conference on Machine Learning (ICML 2023)*.

2023 Y. Cao, T. Hou, Y. Wang, X. Yi, and **G. Sartoretti**. ARiADNE: A Reinforcement learning approach using Attention-based Deep Networks for Exploration. *International Conference on Robotics and Automation (ICRA 2023)*.

2023 H. Goel, Y. Zhang, M. Damani, and **G. Sartoretti**. SocialLight: Distributed Cooperation Learning towards Network-Wide Traffic Signal Control. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2023)*.

2023 Y. Wang, B. Xiang, S. Huang, and **G. Sartoretti**. SCRIMP: Scalable Communication for Reinforcement- and Imitation-Learning-Based Multi-Agent Pathfinding. *AAMAS 2023 (extended abstract)*.

2022 Y. Cao, Y. Wang, A. Vashisth, H. Fan, and **G. Sartoretti**. CAtnIPP: Context-Aware Attention-based Network for Informative Path Planning. *6th Annual Conference on Robot Learning (CoRL 2022)*.

2022 S. Shaw and **G. Sartoretti**. Keyframe-based CPG for Stable Gait Design and Online Transitions in Legged Robots. *IEEE Conference on Decision and Control (CDC 2022)*.

2022 Y. Cao, Z. Sun, and **G. Sartoretti**. DAN: Decentralized Attention-based Neural Network for the MinMax Multiple Traveling Salesman Problem. *International Symposium on Distributed Autonomous Robotics Systems (DARS 2022)*. **Best Student Paper Award**.

- 2022 Q. Ge, **G. Sartoretti**, J. Duan, S. E. Li, Y. Yin, and S. Zheng. Distributed Model Predictive Control of Connected Multi-Vehicle Systems at Unsignalized Intersections. *IEEE International Conference on Unmanned Systems (ICUS 2022)*. **Best Paper Award**.
- 2022 A. Rao, I. Abraham, **G. Sartoretti**, and H. Choset. Sparse Sensing in Ergodic Optimization. *International Symposium on Distributed Autonomous Robotics Systems (DARS 2022)*
- 2022 Y. Zhang, M. Damani, and **G. Sartoretti**. Multi-Agent Traffic Signal Control via Distributed RL with Spatial and Temporal Feature Extraction. *International Workshop on Agent-Based Modelling of Urban Systems (ABMUS) @ AAMAS*.
- 2022 H. Coffin, I. Abraham, **G. Sartoretti**, T. Dillstrom, and H. Choset. Multi-Agent Dynamic Ergodic Search with Low-Information Sensors. *International Conference on Robotics and Automation (ICRA)*, pages 11480-11486.
- 2022 Y. Wang and **G. Sartoretti**. FCMNet: Full Communication Memory Net for Team-Level Cooperation in Multi-Agent Systems. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 1355-1363.
- 2021 F. Laurent, [18 authors omitted], **G. Sartoretti**, Z. Luo, M. Damani, N. Bhattacharya, S. Agarwal, A. Egli, E. Nygren, and S. Mohanty. Flatland competition 2020: MAPF and MARL for efficient train coordination on a grid world. *In NeurIPS 2020 Competition and Demonstration Track*, pp. 275-301.
- 2021 **G. Sartoretti**, A. Rao, and H. Choset. Spectral-based distributed Ergodic coverage for heterogeneous multi-agent search. *15th International Symposium on Distributed Autonomous Robotics Systems (DARS 2021)*. **Best Paper Award**.
- 2021 **G. Sartoretti**, T. Wang, G. Chuang, Q. Li, and H. Choset. Autonomous decentralized shape-based navigation for snake robots in dense environments. *ICRA 2021*.
- 2020 B. Freed, R. James, **G. Sartoretti**, and H. Choset. Sparse discrete communication learning for multi-agent cooperation through backpropagation. *IROS 2020*.
- 2020 B. Freed, **G. Sartoretti**, J. Hu, and H. Choset. Communication learning via backpropagation in discrete channels with unknown noise. *Proceedings of AAAI 2020 - 34th Conference on Artificial Intelligence*, pp.7160-7168.
- 2019 B. Chong, Y. Ozkan Aydin, **G. Sartoretti**, J. Rieser, C. Gong, H. Xing, H. Choset, and D. Goldman. A hierarchical geometric framework to design locomotive gaits for highly articulated robots. *Proceedings of Robotics: Science and Systems (RSS)*.
- 2019 S. Shaw, **G. Sartoretti**, J. Olkin, W. Paivine, and H. Choset. Workspace CPG with body pose control for stable, directed vision during omni-directional locomotion. *International Conference on Robotics and Automation (ICRA) 2019*, pp.6316-6322.
- 2018 **G. Sartoretti**, Y. Wu, W. Paivine, T. K. Satish Kumar, S. Koenig, and H. Choset. Distributed reinforcement learning for multi-robot decentralized collective construction. *International Symposium on Distributed Autonomous Robotic Systems (DARS)*, pp.35-49.
- 2018 B. Chong, Y. Ozkan Aydin, C. Gong, **G. Sartoretti**, Y. Wu, J. Rieser, H. Xing, J. Rankin, K. Michel, A. Nicieza, J. Hutchinson, D. Goldman, and H. Choset. Coordination of back bending and leg movements for quadrupedal locomotion. *RSS 2018*.
- 2018 **G. Sartoretti**, Y. Shi, W. Paivine, M. Travers, and H. Choset. Distributed learning for the decentralized control of articulated mobile robots. *ICRA 2018*, pp.3789-3794.



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### Languages

<i>French</i>	mother tongue		
<i>English</i>	fluent	<i>Spanish</i>	oral comprehension
<i>German</i>	good knowledge	<i>Hungarian</i>	weak oral comprehension

### References for Guillaume Sartoretti

Available upon request.